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10/530,889	04/11/2005	Munetoshi Yamaguchi	28950.0002	3235
27890 77590 6772829008 STEPTOE & JOHNSON LLP 1330 CONNECTICUT AVENUE, N.W.			EXAMINER	
			CANTELMO, GREGG	
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			1795	•
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Application No. Applicant(s) 10/530,889 YAMAGUCHI ET AL. Office Action Summary Examiner Art Unit Gregg Cantelmo 1795 -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --Period for Reply A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS. WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION. Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b). Status 1) Responsive to communication(s) filed on 2a) This action is FINAL. 2b) This action is non-final. 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213. Disposition of Claims 4) Claim(s) 10-23 is/are pending in the application. 4a) Of the above claim(s) _____ is/are withdrawn from consideration. 5) Claim(s) _____ is/are allowed. 6) Claim(s) 10-23 is/are rejected. 7) Claim(s) 10-23 is/are objected to. 8) Claim(s) _____ are subject to restriction and/or election requirement. Application Papers 9) The specification is objected to by the Examiner. 10) ☐ The drawing(s) filed on 11 April 2005 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d). 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152. Priority under 35 U.S.C. § 119 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) All b) Some * c) None of: Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)). * See the attached detailed Office action for a list of the certified copies not received. Attachment(s)

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DETAILED ACTION

Response to Preliminary Amendment

- 1. In response to the preliminary amendment received April 11, 2005:
 - a. Claims 1-9 have been cancelled. Claims 11-23 are pending;
 - b. The amendment to the specification has been entered.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

 The information disclosure statements filed June 9, 2005; October 23, 2006 and November 9, 2006 have been placed in the application file and the information referred to therein has been considered as to the merits.

Drawings

4. The drawings received April 11, 2005 are acceptable for examination purposes.

Claim Objections

- Claims 10-23 are objected to because of the following informalities: The language used is grammatically confusing. For example, in claim 1 the claim recites:
- "...dioxide has a weight loss at 200°C to 400°C when said electrolytic manganese dioxide is heated of not less than 2.7 wt%". This can be more clearly written as "dioxide has a weight loss of not less than 2.7 wt% when said electrolytic manganese dioxide is heated in a range from 200°C to 400°C". Appropriate correction is required.

Claim Rejections - 35 USC § 102

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- Claims 10 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 05-174841 (JP '841)

JP '841 discloses a positive active material for a battery and a battery itself comprising electrolytic manganese dioxide which is heat treated in a range from 120-400°C to remove water from the product (abstract). Since the materials are identical and the heat treatment range are substantially identical, one of ordinary skill in the art would reasonably expect that the prior art product would exhibit the same degree of weight loss from the removal of water in the prior as recited in claim 10 (applied to claims 10 and 16).

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the

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allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter, 1990)

In the case of the instant application the basis for expectation of inherency is that the prior art product is identical to the claimed product and heated to nearly identical temperatures to remove water from the product. Thus the degree of weight loss in the prior art reference would expectedly be identical to that recited in claim 10.

The Examiner invites applicant to provide that that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product.

Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

 Claims 10 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 09-188519 (JP '519)

JP '519 discloses a positive active material for a battery and a battery itself comprising electrolytic manganese dioxide which is heat treated in a range from 120-400°C to remove water from the product (abstract). Since the materials are identical and the heat treatment range are substantially identical, one of ordinary skill in the art would reasonably expect that the prior art product would exhibit the same degree of

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weight loss from the removal of water in the prior as recited in claim 10 (applied to claims 10 and 16).

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

In the case of the instant application the basis for expectation of inherency is that the prior art product is identical to the claimed product and heated to nearly identical temperatures to remove water from the product. Thus the degree of weight loss in the prior art reference would expectedly be identical to that recited in claim 10.

The Examiner invites applicant to provide that that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product.

Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to

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product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

Claims 10 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by
 U.S. Patent No. 5,866,278 (Sumida)

Sumida discloses a positive active material for a battery and a battery itself comprising electrolytic manganese dioxide which is heat treated in a range from 120-400°C to remove at least 3% by weight of water from the product (abstract as applied to claims 1 and 16).

 Claims 10 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2002-289185 (JP '185).

JP '185 discloses an electrolytic manganese dioxide positive active material and battery using the same wherein the (abstract as applied to claim 10 and 16).

The product has a specific surface area as low as $50 \text{ m}^2/g$ (abstract as applied to claims 11 and 17).

Regarding the claimed weight loss and heating conditions:

Claims 10 and 16 are to a product and are not limited by the weight loss and heating of claim 10. Rather the prior art need only be capable of exhibiting the same minimum weight loss when the prior art product is exposed to the same conditions.

One of ordinary skill in the art would reasonably expect that since the prior art product has the same composition and is formed by a substantially identical electrolytic process

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that the prior art product will exhibit the same degree of weight loss as recited in claim 10 in the presence of the same temperature.

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

In the case of the instant application the basis for expectation of inherency is that the prior art product is identical to the claimed product, formed by a nearly identical process will expectedly exhibit the same amount of weight loss when heated to the claimed temperatures, absent clear evidence to the contrary.

The Examiner invites applicant to provide that that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product.

Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to

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product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

Claim 10-23 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S.
 Patent Application Publication No. 2004/0009400 (Yamaguchi).

The applied reference has a common inventor with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Yamaguchi discloses a positive electrode and method of making wherein the positive electrode comprises electrolytic manganese dioxide (abstract).

The process by which the prior art product is made is identical to that of the instant claims (see paras. 17 and 19 and the Examples as applied to claims 14, 15, and 20-23).

The product has a BET less than 75 ${\rm m}^2/{\rm g}$ (para. 33 as applied to claims 11 and 17).

The product has an electric potential from 270-320mv (para. 32 as applied to claims 12, 13, 18 and 19).

Regarding the claimed weight loss and heating conditions:

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Claims 10 and 16 are to a product and are not limited by the weight loss and heating of claim 10. Rather the prior art need only be capable of exhibiting the same minimum weight loss when the prior art product is exposed to the same conditions.

One of ordinary skill in the art would reasonably expect that since the prior art product has the same composition and is formed by a substantially identical electrolytic process that the prior art product will exhibit the same degree of weight loss as recited in claim 10 in the presence of the same temperature.

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

In the case of the instant application the basis for expectation of inherency is that the prior art product is identical to the claimed product, formed by a nearly identical process will expectedly exhibit the same amount of weight loss when heated to the claimed temperatures, absent clear evidence to the contrary.

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The Examiner invites applicant to provide that that the prior art products do not necessarily or inherently possess the characteristics of his for her! claimed product.

Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

This also applies to claim 23 which does not positively require the heating step but only that the product obtained by in the claim will exhibit a weight loss of not less than 2.7 wt% when heated at a temperature from 200-400°C. Again since the prior art product and process of making are identical, there is a reasonable expectation that the amount of weight loss in the prior art of Yamaguchi will be the same as recited in claim 23.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior at are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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Determining the scope and contents of the prior art.

- Ascertaining the differences between the prior art and the claims at issue.
- Resolving the level of ordinary skill in the pertinent art.
- Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claim 10-21 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP '185 in view of either JP '841, JP '519 or Sumida.

Note that claims 10 and 16 are alternatively rejected herein as it is held that the concept of heating electrolytic manganese dioxide is widely well known in the art and thus such a step would have well known by one of ordinary skill in the art.

JP '185 discloses an electrolytic manganese dioxide positive active material and battery using the same wherein the (abstract as applied to claim 10 and 16).

The product has a specific surface area as low as 50 m2/g (abstract as applied to claims 11 and 17).

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While it is first presented that the limitations of the weight loss and heat step are not necessarily required as claimed (only that the claimed product can exhibit such a loss in weight upon application of said heat), such a step would have been obvious to one of ordinary skill in the art.

As discussed above each of JP '841, JP '519 and Sumida teach of heating electrolytic manganese dioxide within a similar, encompassing or identical temperature range to remove water from the compound.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of JP '185 by heating electrolytic manganese dioxide within about 200-400°C as taught/suggested by either JP '841, JP '519 or Sumida since it would have provided the predictable and desired result of removing water from the compound.

Regarding the product-by-process limitations of claims 14, 15, 20 and 21: the methodology of JP '185 is substantially similar to the methodology of claims 14 and 15. The electrolysis method includes a solution of manganese sulfate and sulfuric acid, run at a temperature in the range of 90-95°C, a current density of at least 50A/cm2 and an acid concentration of 60-80 g/L 60g/L (see Table). Therefore the products are not held to be clearly distinguishable from one another. One of ordinary skill in the art would reasonably expect that the prior art product would be identical to that of the product-by-process of claims 14, 15 else since the differences in the process conditions are minor, any differences in the products would be minor and obvious (applied to claims 14, 15, 20 and 21).

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Regarding the electric potential of claims 12, 13, 18 and 19:

JP '185 discloses a positive active material for a battery and a battery itself comprising electrolytic manganese dioxide which is formed by a nearly identical electrolytic process. Since the materials are identical and the process of making the electrolytic manganese dioxide of JP '185 are substantially similar to that of the instant application's, there is a reasonable expectation that the prior art composition will exhibit the same electric potential as recited in claims (12, 13, 18 and 19) absent clear evidence to the contrary.

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

In the case of the instant application the basis for expectation of inherency is that the prior art product is identical to the claimed product, formed by a nearly identical process and heated to nearly identical temperatures to remove water from the product.

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Thus there is a reasonable expectation that the prior art composition will exhibit the same electric potential as recited in claims (12, 13, 18 and 19) absent clear evidence to the contrary.

The Examiner invites applicant to provide that that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product.

Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

12. Claim 22 and 23 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP '185 in view of either JP '841, JP '519 or Sumida.

The methodology of JP '185 is substantially similar to the methodology of claims 22 and 23. The electrolysis method includes a solution of manganese sulfate and sulfuric acid, run at a temperature in the range of 90-95°C, a current density of at least 50A/cm2 and an acid concentration of 60-80 g/L 60g/L (see Table). Therefore the processes are not held to be clearly distinguishable from one another. One of ordinary skill in the art would reasonably expect that the prior art product would be identical to that of the of claims 22 and 23 else since the differences in the process conditions are

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minor, any differences in the products would be minor and obvious (applied to claims 22 and 23).

Further as to the weight loss and heat treatment step of claim 23:

While it is first presented that the limitations of the weight loss and heat step are not necessarily required as claimed (only that the claimed product can exhibit such a loss in weight upon application of said heat), such a step would have been obvious to one of ordinary skill in the art.

As discussed above each of JP '841, JP '519 and Sumida teach of heating electrolytic manganese dioxide within a similar, encompassing or identical temperature range to remove water from the compound.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the teachings of JP '185 by heating electrolytic manganese dioxide within about 200-400°C as taught/suggested by either JP '841, JP '519 or Sumida since it would have provided the predictable and desired result of removing water from the compound.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP 49-008583 and JP 56-126263 each teach that it is extremely well known in the art to heat manganese dioxide in a range from 250-400°C to remove bonding water. U.S. Patent No. 6,214,198 is cited of interested.

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 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greag Cantelmo whose telephone number is 571-272-

1283. The examiner can normally be reached on Monday to Thursday, 8:30-6:30.

supervisor. Pat Rvan can be reached on 571-272-1292. The fax phone number for the

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Pat Ryan can be reached on 371-212-1292. The lax priorie number for the

organization where this application or proceeding is assigned is 571-273-8300.

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregg Cantelmo Primary Examiner

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/Gregg Cantelmo/

Primary Examiner, Art Unit 1795